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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/339,199	06/24/1999	FUMIAKI NAKATAKE	21.1931/HJS	2308

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EXAMINER

RAMSEY, KENNETH J

ART UNIT	PAPER NUMBER
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2879

DATE MAILED: 02/11/2002

#10

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/339,199

Applicant(s)

NAKATAKE ET AL

Examiner

Kenneth J. Ramsey

Art Unit

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– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 15-26 is/are allowed.
- 6) ☒ Claim(s) 1-4, 6, 9, 11, 12, 14 and 27-30 is/are rejected.
- 7) ☒ Claim(s) 5, 7, 8, 10 and 13 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 6-7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 6, line 5, "ac-shaped" should be -frame-shape". Claim 7, line 3, "a" should be cancelled.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1 - 4, 11, 12, 14 and 27-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka (6,189,579) in view of Seki et al (JP 09-251839) and Kimura (5,997,379). Tanaka discloses a process for the removal of impurities and filling of a gas into a previously sealed display device. Seki et al (previously referred to as Tadashi et al) disclose a process in which the sealing of the periphery of a display panel, introduction of a fill gas and closing of the fill opening are carried out in a continuous process. Seki et al, in the "means" section, paragraphs 0010 through 0013 (first embodiment) and paragraphs 0014 through 0015 (second embodiment) discloses embodiments of the invention in which apparently "both glass substrates are sealed by differential pressure of kiln internal pressure and the pressure between the two substrates" whereby the sealing pressure is made uniform and the gap between the glass substrates is made exact. See the section headed "Effect" in the machine

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translation of Seki et al. While is not stated which embodiments of Seki et al the above quotation is directed to, the examiner is certain that it was not the third embodiment cited by the applicant in his remarks. In the first and second embodiments of Seki et al it is disclosed that piping 12 is connected through spools to the interior of each display panel subassembly, via valve V3 to an evacuation device and via valve V2 to a cylinder for supply of discharge gas. A separate line controlled by valves V1 and V4 determine the pressure within the kiln exterior of the discharge space. Such a configuration is more clearly shown in Tanaka. To achieve the differential pressure in Seki et al, second embodiment, it would have been suggested to one of ordinary skill in the art that the pressure differential is achieved by maintaining the inert gas pressure supplied by valve V1 to the kiln atmosphere while evacuating the inside of the panel while the sealant is still molten or soft in view of the teaching of Kimura. It would have been obvious for one of ordinary skill in the art to combine a panel sealing process as in Seki et al with a gas filling process as in Tanaka et al and to provide the degasing process while still at a high temperature. As to claim 3, since Tanaka must evacuate the panel to remove impurities, it would have been obvious to one of ordinary skill in the art, at the time of the claimed invention, to begin the evacuation step at the time of the sealing process to at the same time provide a pressure differential as suggested by Kimura. The motivation to combine these steps would be to shorten the process time while accomplishing all of the intended goals such as obtaining a desired spacing of the display panels and a high purity gas filling. As to claim 28, Tanaka performs the degasifying step after sealing. Further, it would have been obvious to one of ordinary

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skill in the art to degasify the devices at a temperature lower than the sealing temperature so that no more gas is outgassed from the device at the higher temperatures.

5. Claims 29 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka (6,189,579) in view of Seki et al (JP 09-251839) and Kimura (5,997,379) *Nagano et al '607* *Nagano et al, column 5, line 61 +* further in view of ~~Kanaka~~. As to claims 29 and 30, ~~Kanaka~~ states "at this level of temperature, glass 6 remains hard and keeps the back and front panel members 1 and 3 at the initial distance from each other. As the insulating partitions 5 are still spaced apart from the back panel member 1, the enclosure defined between the panel members 1 and 3 has a higher conductance and can be degassed and evacuated more efficiently than when the partitions 5 contact the back panel member 1. " It would have been obvious to one of ordinary skill in the art to that the initial distance between the glass plates can be maintained by relying upon a leak clearance between the glass sealant and the back panel and it was well known at the time of applicants' invention to in the art to provide a protuberance on the seal member to increase the spacing. After the sealant is deformed, it is clearly obvious to continue the evacuation through the exhaust tube to maintain the low atmosphere in the device.

6. Claims 6 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka, Seki et al, and Kimura as applied to claim 1 above, and further in view of Itoh et al (6,039,620). To carry out the process of Tanaka, as above modified by Seki et al, and Kimura, wherein the substrates form a plurality of devices which are later divided as

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in Itoh et al would have been obvious to one of ordinary skill since it optimizes the production process.

7. Claims 5, 7, 8, 10 and 13 would be allowable if rewritten or amended to be made self contained and to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.

8. Claims 15-26 are allowed.

9. The following is a statement of reasons for the indication of allowable subject matter: claim 5 is allowable since the prior art does not suggest the claimed process wherein, additionally, a barrier wall is provided to prevent an inward invasion of the melted sealant; claims 7 and 10 are allowable since the prior art does not suggest the claimed processes thereof including connecting the evacuation tube to conduction pipes which are each located in a portion of the panel so as to be in close proximity to each other; claim 13 is allowable since the prior art does not teach or suggest raising the pressure around the display panel at least once in the process of lowering the pressure before melting of the seal-glass layer. Claim 15 is allowable since the prior art does not teach or suggest the sequence of steps as recited therein.

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Dynka et al (5,697,825), figure 4, discloses a similar heating and evacuation process for a field emission display device. Itoh (5,564,958) discloses gas purging of a display device.

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Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Directions for Responses

Any formal response to this communication should be directed to examiner Kenneth Ramsey, Art Unit 2879, and either
faxed to: 703-872-9319; or mailed to: Box AF
Assistant Commissioner For Patents
Washington, D.C. 20231

Technical inquiries concerning this communication should be directed to Kenneth J. Ramsey, (703) 308-2324 (voice), (703) 746-4832 (fax).

kjr
February 6, 2002



Kenneth J. Ramsey
Primary Examiner